International Journal of Academic Research in Accounting, Finance and Management Sciences
Vol. 10, No.2, April 2020, pp. 223–232
E-ISSN: 2225-8329, P-ISSN: 2308-0337

www.hrmars.com

To cite this article: Abd Rahman, N. H., Ismail, S., Ridzuan A. R. (2020). *A Comprehensive Review on the Determinants of Economic Growth for Indebted Countries,* International Journal of Academic Research in Accounting, Finance and Management Sciences 10 (2):223-232.

www.hrmars.com
ISSN: 2225-8329

http://dx.doi.org/10.6007/IJARAFMS/v10-i2/7439 (DOI: 10.6007/IJARAFMS/v10-i2/7439).

A Comprehensive Review on the Determinants of Economic Growth for Indebted Countries

Nur Hayati Abd Rahman[1], Shafinar Ismail[2], Abdul Rahim Ridzuan[3]

[1]Universiti Teknologi MARA Cawangan Melaka, Malaysia, E-mail: nurhayati.uitmt@gmail.com (Corresponding author)

Abstract

This article highlights the main determinants of the economic growth for indebted countries. The reason being is to help future researchers and policymakers to set a priority on the essential variables that assist in stimulating economic growth, especially among the indebted countries. It is because previous researchers include doubtful variables in the growth model that led to biased estimation. Hence, this paper aims to solve the problem by giving guidelines to future researchers and policymakers on the main determinants of economic growth, especially when the countries are facing with high public debt. In light of this, we have conducted a systematic literature review by adopting the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA). It is to report the findings found from the reliable journal articles downloaded from the Scopus database. The articles derived from the Scopus database were then being identified and screened accordingly based on specific criteria. The articles selected from the identification and screening processes were then being examined individually by looking at the titles, abstracts and the main contents. In the end, only 26 articles that highlight the determinants of the debt-growth model were selected. The review managed to formulate five main themes that represent the determinants of the debt-growth model, namely demographic, capital, government policies, macroeconomic stability and openness. From the five themes, we have generated eleven themes to allow for more detail explanation on each theme. The findings highlight the importance of five main variables in each theme that can help the indebted countries to boost their economic growth. Finally, we propose a few recommendations for future researches and policymakers.

Key words

Economic Growth, PRISMA, Indebted Countries, Debt, Debt-Growth Model, Review.

Received: 18 Jun 2020
Revised: 21 Jul 2020
Accepted: 28 Jul 2020
Published Online: 05 Aug 2020

1. Introduction

In the era of the fourth industrial revolution, there is a need for a change in the economic structure parallel to the industrial needs. Among others, the uses of artificial intelligence, advanced technology and the Internet of things (IoT) will become highly significant shortly. The current issue lies in the readiness of the countries to embrace this revolution. Massive amount of capital is needed to ensure the economic transformation plans are in-place with special attention in the areas of technological advancement, invention and innovation, research and technology, artificial intelligence as well as human capital development.

Meanwhile, most of the countries worldwide are currently facing with the problems related to the ageing population as well as climate change. The rise in the ageing population is one of the demographic issues that received significant attention in the literature. Statistically, Japan is one of the countries that

have among the percentage of the ageing population (Miranda, 2018). As the number of the ageing population increases, it forces the government of the countries to allocate higher expenditures to support this kind of population especially in the forms of pensions, medical expenditure and age-related infrastructures (Nagarajan *et al.*, 2017). Similarly, the problem of climate change is alarming due to its ability to create adverse impacts on the economy. Among others, the rise in the world temperature, as well as the sea level, together with the cyclones and extreme winds, require the governments of all countries to allocate specific budgets in handling the chaos derived from these environmental changes.

The above issues imply that the government requires a higher amount of capital to maximize the welfare of the citizens as well as to ensure the successful economic transformation plan in-line with the IR4.0. Hence, the government can apply the golden rule of public finance in which they can impose a higher level of taxes in order to accumulate a more significant amount of revenues (Shkolnyk & Koilo, 2018). They can use the revenues to cover the expenditures needed by the government based on their priority levels. However, an increase in taxation creates distortionary effect to the economy via a decline in the investment level (Karadam, 2018) as well as an increase in the inflationary condition (Reinhart *et al.*, 2012). In light of this, public debt is an alternative to tax, which can minimize the adverse effect on economic growth.

In the growth literature augmented with debt, numerous independent variables have been used to explain the economic growth apart from the public debt itself. However, some of the independent variables included in the model were doubtful variables (Bitar *et al.*, 2018) due to a missing link with any grounded theories. Thus, this paper aims to identify the appropriate variables that should be included in the growth model augmented with debt (or so-called as a debt-growth model) and group them based on specific themes. The themes are formed based on the uses of the variables as specified by previous literature. The formation of the themes is to assist future researchers in choosing the best variables to be included in the growth model and interpret them wisely based on specific objectives of their existence in the model.

2. The Need for a Systematic Review

A systematic review is a process of recognizing, combining and evaluating all accessible data either from qualitative or quantitative, to answer a specific research question. It is different from the conventional style of review since it involves a transparent process in retrieving reliable articles that specifically focus on a specific research area. It also helps the researchers to gather concrete evidences on a particular subject matter. Concerning the determinants of the debt-growth model, this issue requires a systematic review due to the following reasons. Notwithstanding the abundant literature, there is no consensus on the main determinants of the economic growth augmented with debt. Even though most of the previous literature was using the variables in the Solow growth model or endogenous growth model as a starting point, we shall include other variables, taking into account the effects of the government policies, financial development, globalization and liberalization that exist in the current scenarios. Hence, this paper aims to address this gap by grouping the variables that should be included in the growth model based on specific themes, as suggested by previous literature. This study is crucial as it helps future researchers to use the right control variables in the debt-growth model. The following section discusses the materials and methods used to answer the research objective.

3. Methodology of research

This section explains the ways on how to conduct a systematic review. Initially, it started with the PRISMA, followed by resources, articles' selection, data abstraction as well as analysis.

3.1. Prisma

In conducting a systematic literature review, it is a requirement to use publication standards that can guide the researchers to generate necessary information and examine the quality of the review. The standard is called Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). The reason for using PRISMA is due to its ability to examine specific databases of the literature based on specific requirements such as time as well as inclusion and exclusion criteria. In gathering the information from the systematic review, we use specific codes mainly to address the gaps that exist in the current literature.

3.2. Resources

In gathering the right information, this study utilized a Scopus database as the primary resources as it encompasses credential literature for a wide range of studies. Within the economic studies, there were 471 journals listed in this database. By narrowing down to the economic growth as a subject matter, there were 14,204 journal articles published in the Scopus database from 2017 to 2019. Due to a large number of journals related to this area, the researcher decided to use Scopus database in conducting the systematic literature review.

3.3. Articles' Selection (Identification, Screening and Eligibility)

The third step after PRISMA and resources is the articles' selection. We select the articles rigorously by conducting three stages namely identification, screening and eligibility. Firstly, in the identification stage, the keywords related to both public debt and economic growth were identified based on similar terms as suggested by past researchers, thesaurus and dictionaries. After the identification of the keywords, we developed the search string in April 2019 on the Scopus as specified in Table 1. By using the keywords and the search string, the researcher managed to gather 1,046 articles from the Scopus database.

Table 1. The search string

Database	Search String
Scopus	TITLE-ABS-KEY (("public debt" OR "government debt") AND ("economic growth" OR "GDP" OR "national income")) AND (LIMIT-TO (PUBSTAGE , "final")) AND (LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2017)) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "re")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (SRCTYPE , "j"))

Immediately after the identification stage, screening as the second stage was conducted to all 1,046 articles with the purpose to exclude non-relevant articles mainly due to the duplication and other criteria. The criteria include the inclusion and exclusion criteria based on year, document type, publication stage, source type and language. In this case, the researcher includes all articles that are published in the English language, in the journal articles only from 2017 to 2019. The selected articles consist of articles and reviews with the final publication stage. Indirectly, it implies that the excluded articles include all articles published as a book chapter, conference paper, books, editorial, business articles, conference review, erratum and short survey. In addition, we did not include any published articles before 2017 in order to capture the latest three-year trends of the reviews and analyses. Thus, out of 1,046 articles, 823 articles were excluded based on the five criteria as tabulated in table 2, leading to only 223 articles left for the review.

Table 2. The inclusion and exclusion criteria

Criteria	Eligibility	Exclusion
Year	2017 - 2019	Before 2017
Document type	Article	Book chapter, review, conference paper, book, editorial, business article, conference review, erratum and short survey
Publication stage	Final	Article in press
Source type	Journals	Books, conference proceedings, book series and trade publications
Language	English	Non-English

Finally, the third stage in selecting the right articles is eligibility. In this stage, all 223 articles were examined thoroughly by looking at the titles, abstracts and the main contents. The reason is to select the right articles that explain the relationship between public debt and economic growth. As a result, we select 26 articles for the systematic literature review. By adopting a diagram from Moher *et al.* (2009), the whole process in selecting the articles from the Scopus database is explained in a diagram, as shown in Figure 1.

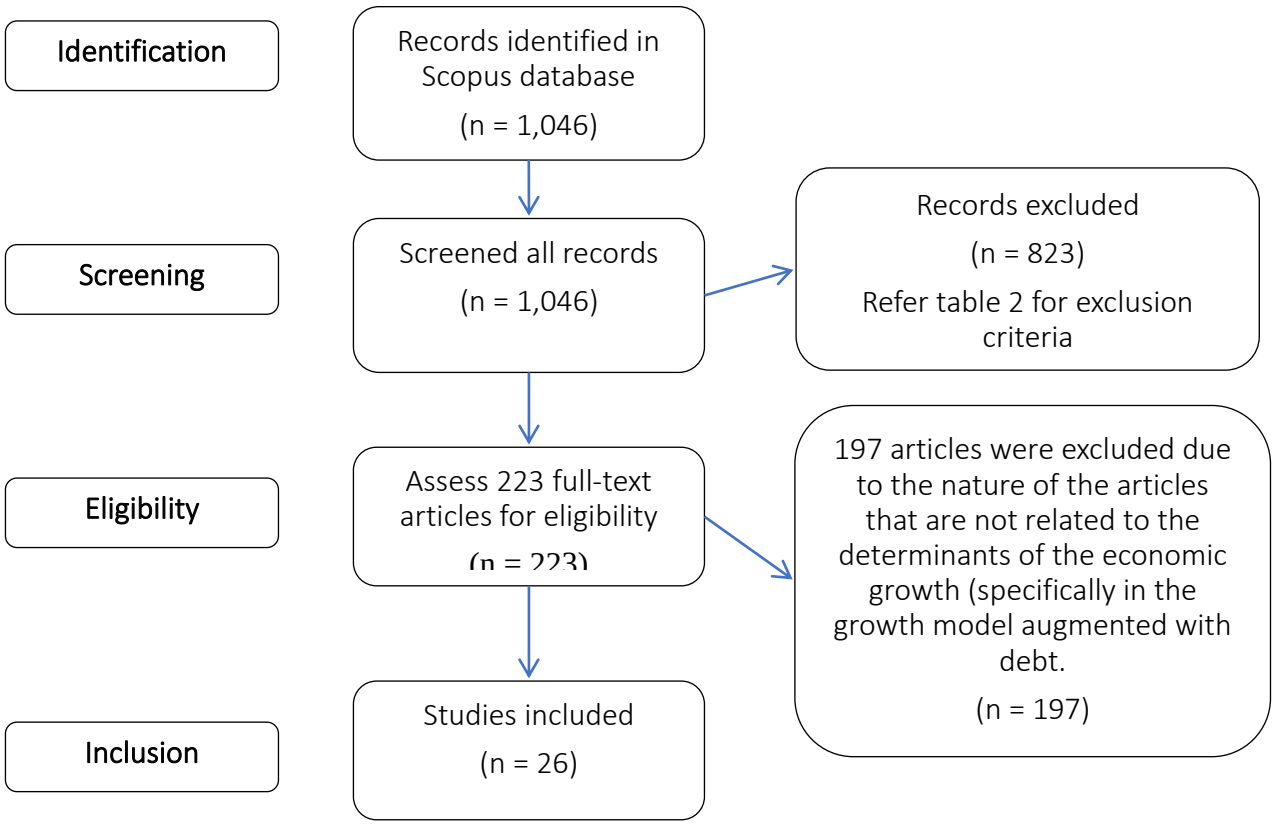

Figure 1. The process of selecting the articles

4. Data Abstraction and Analysis

An integrative review is conducted by analyzing all selected articles regardless of their research design, be it qualitative or quantitative. Altogether, 24 articles were quantitative, focusing on both time series (15 articles) and panel data analyses (9 articles), while the remaining were the qualitative papers that conduct the reviews as well as meta-analyses. The reason is to gather the information needed to answer the research questions. In doing so, we conduct a thematic analysis to develop appropriate themes and compile the statements and data from 26 articles accordingly. Based on the themes created, numbers of groups were formed based on the nature of the data. As suggested by Patton (2002), we code the groups using a coding method. The idea is to convert all statements and data gathered into meaningful data for a more straightforward interpretation. Consequently, we were able to create eight themes to imply the main determinants of the economic growth model, augmented with debt. The following section elaborates the details on the findings.

5. Findings

Generally, public debt can be in the forms of domestic debt and external debt. Looking at the past three years, the majority of the previous literature focuses on how the domestic debt (22 articles) affects the economic growth of a country or a group of economies. Only four articles explained the role of external debt on the same subject matter. In examining the essential independent variables in the debt-growth model, we have created five themes from the 121 variables in the total of 26 articles. These themes were formed based on proxies discussed by previous researchers (Boldeanu & Constantinescu, 2015; Petrakos *et al*., 2007).

The themes are as follows: (1) demographic; (2) capital; (3) government policies; (4) macroeconomic stability; and (5) openness. From the five themes, we have further generated eleven sub-themes to allow for a more detail explanation of each theme. The following table shows the details on each theme and the sub-themes.

Table 3. The main themes and sub-themes for the determinants of the growth model, augmented with debt

No.	Themes	Sub-Themes	Code	No. of Appearance	Total No. of Appearance
1	Demographic	Population	PO	19	21
		Age structure	AG	3	
2	Capital	Physical capital	PH	21	30
		Human capital	HC	8	
		Technology	TC	1	
3	Government policies	Fiscal policy	FP	18	27
		Monetary policy	MP	9	
4	Macroeconomic stability	Internal stability	IS	19	23
		External stability	ES	4	
5	Openness	Trade	TR	19	20
		Foreign aid	FA	1	

Table 4 illustrates the variables under each theme that might be essential in explaining how indebted countries can achieve higher economic growth.

Table 4. The variables under each popular theme

THEME	DEMOGRAPHICS					CAPITAL							GOVERNMENT POLICIES							MACRO. STABILITY			OPENNESS			
SUB-THEME	PO			AG		PH				HC		TC	FP				MP			IS		ES		TR		FA
VARIABLES / AUTHORS	PG	EM	LF	AD	GC	GF	FI	TI	LE	SC	TE	CB	GE	SV	TX	DR	MS	IN	RS	IF	UN	EX	BP	TO	TT	FA
Lim, 2019							x															x	x			
Liaqat, 2019					x	x							x					x		x						
Maitra, 2019																	x	x		x						x
Mhlab & Phiri, 2019						x														x					x	
Shkolnyk & Koilo, 2019	x							x								x			x		x	x		x		
Ko, 2019													x		x			x		x						
Bhatt & Neveu, 2018	x			x										x			x			x				x		
Butkus & Seputiene, 2018	x					x				x			x							x				x		
Karadam, 2018	x							x		x														x		
Yang & Su, 2018																				x						
THEME	DEMOGRAPHICS					CAPITAL							GOVERNMENT POLICIES							MACRO. STABILITY			OPENNESS			
SUB-THEME	PO			AG		PH				HC		TC	FP				MP			IS		ES		TR		FA
VARIABLES / AUTHORS	PG	EM	LF	AD	GC	GF	FI	TI	LE	SC	TE	CB	GE	SV	TX	DR	MS	IN	RS	IF	UN	EX	BP	TO	TT	FA
Gómez-Puig & Sosvilla-Rivero, 2018a	x								x					x						x				x		
Gomez-Puig & Sosvilla-Rivero, 2018		x						x	x																	
Ahlborn & Schweickert, 2018	x				x		x													x				x		
Shahor, 2018	x							x												x				x		
Pegkas, 2018a	x					x																		x		
Arčabić, Tica, Lee, & Sonora, 2018a	x			x		x				x										x				x		
Onafowora & Owoye, 2017					x															x		x		x		
Awdeh & Hamadi, 2017	x		x								x		x											x		
Chiu & Lee, 2017	x					x								x						x				x		
Gomez-Puig & Sosvilla-Rivero, 2017	x				x				x											x				x		
Kempa & Khan, 2017								x				x						x						x		
Kim, Ha, & Kim, 2017a										x		x	x							x				x		
Taher, 2017	x													x						x				x		
Burhanudin, Muda, Nathan, & Arshad, 2017			x			x																				
Ewaida, 2017	x		x	x		x	x	x		x		x	x	x	x	x	x	x		x	x	x		x		
Chen, Yao, Hu, & Lin, 2016			x					x																		
Total	14	1	4	3	4	8	3	6	3	5	1	3	6	5	2	2	3	5	1	17	2	4	1	17	1	1

DEMOGRAPHICS	
PO	Population
PG	Population growth
EM	Employment
LF	Labour force
AG	Age structure
AD	Age dependency ratio

CAPITAL	
PH	Physical capital
GC	Gross capital formation
GF	Gross fixed capital formation
FI	Foreign direct investment
TI	Total investment
HC	Human capital
LE	Life expectancy
SC	Average years of schooling

GOVERNMENT POLICIES	
FP	Fiscal policy
CB	Current balance
GE	Government final consumption expenditure
SV	Government savings
TX	Taxation
DR	Debt service ratio
MP	Monetary policy
MS	Money supply
IN	Interest rate
RS	Reserve

MACROECONOMIC STABILITY	
IS	Internal stability
IF	Inflation rate
UN	Unemployment rate
ES	External stability
EX	Exchange rate

OPENNESS	
TR	Trade
BP	Balance of payment
TO	Trade openness
TT	Terms of trade
FA	Foreign aid

6. Findings and Discussions

This section discusses the determinants of the economic growth that is augmented with debt, specifically focusing on the five main themes, as illustrated in Table 4. These themes; namely demographics, capital, government policies, macroeconomic stability and openness, are explained along with selected sub-themes.

6.1. Demographics

Out of 26 articles, 17 of them have included the demographic variables as one of the determinants in the debt-growth model. The proxies used to represent demographic variables varied across researchers. Among them are the population growth (PG), employment rate (EM), labour force participation rate (LF) and age dependency ratio (AD). The most popular proxy is the population growth as 14 out of 17 articles used it as a demographic variable. In line with the growth models, the use of a demographic variable is highly essential as it is one of the essential control variables in explaining economic growth. For instance, the Solow growth model, as well as the endogenous growth model, stresses the importance of labour as the inputs for the production function. An increase in the amount of labour will help the firms to produce more goods and services, thus contribute to the economic growth of a country. With that, majority of the previous researchers use population growth as a proxy of the increase in the amount of labour (Butkus & Seputiene, 2018; Karadam, 2018; Shkolnyk & Koilo, 2018).

Even though theoretically, the demographic variable is said to boost the economic growth of a country, the empirical findings found the opposite. It can be either positive (Pegkas, 2018) or negative (Awdeh & Hamadi, 2017; Ewaida, 2017). The positive relationship is clear as the population growth assist the economy to grow. It happens when the countries can increase the productivity of goods and services as the population increases. In the meantime, the relationship can turn to be harmful when the level of the population gives a burden to the economic condition as the number of jobs is limited and more number of people being unemployed.

6.2. Capital

Capital, as the second theme in the debt-growth model, can be divided into three sub-themes namely physical capital (Lim, 2019; Mhlaba & Phiri, 2019), human capital (Shahor, 2018; Shkolnyk & Koilo, 2018) as well as technology (Awdeh & Hamadi, 2017). From the total of 26 articles, physical capital is the most popular version of capital used in the previous research with 18 articles, followed by human capital (8 articles) and technology (1 article).

With regards to the theoretical explanation, the contribution on the physical capital on the economic growth is explained extensively by the prominent economists (Domar, 1947; Harrod, 1948; Lucas, 1988; Romer, 1986; Solow, 1956). With help from labour as the input of the production, a country with a high level of physical capital can produce more goods and services. From the previous studies under investigation, four sub-themes emerged under the physical capital, namely gross capital formation (GC), gross fixed capital formation (GF), foreign direct investment (FI) and total investment (TI). The first two are referring to the domestic investment, while the third sub-theme is referring to the investment derived from the foreign countries. Regardless of the proxy used to represent the physical capital, all of them are equally important (Ahlborn & Schweickert, 2018; Liaqat, 2019; Mhlaba & Phiri, 2019), as they are highly needed to support the economic growth and development. An increase in the capital will increase the productivity growth of a country due to more investments coming in.

Similarly, human capital is also considered as another type of capital, in-line with the endogenous growth model that stresses its importance to economic growth. Within the total articles under investigation, previous researchers use life expectancy (Gomez-Puig & Sosvilla-Rivero, 2018; Gómez-Puig & Sosvilla-Rivero, 2018) and average years of schooling (Butkus & Seputiene, 2018; Karadam, 2018) to measure human capital. In the endogenous growth model by modern economists (Lucas, 1988; Romer, 1986), the role of human capital investment is highly essential as it encourages the creation of new knowledge and innovative ideas to improve existing processes and procedures, thus leading to an increase in productivity and efficiency of the labours. Consequently, the return on the investments can be reaped in the long-run by looking at the growth pattern of the economy. This relationship is proven to be true (Butkus

& Seputiene, 2018; Gómez-Puig & Sosvilla-Rivero, 2018) when the human capital variable is tested empirically with economic growth.

Previous growth model such as the Harrod-Domar model has focused on the role of capital as the primary source of economic growth (Domar, 1947; Harrod, 1948). Nevertheless, one of the critics for the Harrod-Domar growth model is on the inability to let the technological growth to be flexible. It is crucial because the technology is also part of the capitals needed by a country as it helps to increase productivity growth. Even though a country can accumulate a higher level of capital, they might not be able to achieve the optimum level of the economic growth due to lack of complementary effect between capital and flexible technology (Snowdon & Vane, 2005). Thus, based on this argument, technology is also essential in stimulating the economic growth of a country. However, looking at the selected articles under investigation, only one article (Awdeh & Hamadi, 2017) includes technology as the control variable in the debt-growth model. The reason being is due to the assumption that the technological element is in place when a country invests more in physical capital, regardless of whether it is domestic or foreign direct investments. The spillover from the investments helps to transfer the technology, along with the expertise in critical areas. The above reviews illustrate a mutual consensus on the relationship between capital and economic growth of a country. Regardless of the types of capital under investigation, all of them have a positive relationship with economic growth.

6.3. Government Policies

In stimulating higher economic growth, the government plays essential roles in choosing the right policies to be implemented consistent with the current economic condition. They can conduct two policies, namely fiscal policy and monetary policy. By referring to the articles chosen, the stimulation of the economic growth happens when there is a change in any of the five fiscal instruments; namely current balance (CB), government expenditure (GE), domestic savings (SV), taxation (TX) and debt service ratio (DR). Out of these five variables, two variables were prevalent as control variables in the debt-growth model, namely the government expenditure (Awdeh & Hamadi, 2017; Ewaida, 2017; Liaqat, 2019) and domestic savings (Bhatt & Neveu, 2018; Chiu & Lee, 2017; Taher, 2017). Indirectly, it illustrates that previous researchers take into account the size of the government as well as the national savings in determining the economic growth of a country. Parallel to the Keynesian economists, an increase in the government development expenditure helps in boosting the economic growth of a country. High spending on this type of expenditure will increase job opportunities to the citizen; hence increase the ability of the country to grow further.

From the monetary policy's perspective, most of the articles employed money supply (MS), interest rate (IN) and reserve (RS) as the control variables. As expected, the most influential variable under the sub-theme of the monetary policy is the interest rate (Ko, 2019; Liaqat, 2019; Maitra, 2019). It is because this variable assists in stabilizing the economic condition, especially when the economy has an inflationary or recessionary problem. Previous researches found that the interest rate has an adverse impact on economic growth (Maitra, 2019). An increase in the interest rate will increase the cost of borrowing, hence limiting the ability of the private sector to groom their business condition. As a result, unemployment will occur since the businesses are facing hard times to settle their debt commitments, especially when the costs start to increase. With regards to the selection of the variables that represent the government policies, each variable has its link with economic growth. As stated earlier, the most common variables used in the articles under investigation were the government expenditure (representing fiscal policy) and interest rate (representing monetary policy).

6.4. Macroeconomic Stability

Internal and external stability is highly essential to ensure sustainable economic growth. It can be represented internally by looking at the inflation (INF) and unemployment levels (UN). Meanwhile, the exchange rate volatility (EX) illustrates the macroeconomic instability from the external perspective. Even though the endogenous growth model or the Solow growth model does not incorporate the inflation rate as part of the variables that may change the economic growth, its significance towards the growth is vital. It is proven as 17 out of 26 articles have integrated the inflation rate in the debt-growth model to represent

the macroeconomic stability of a country. However, only 2 and 4 articles have included unemployment and exchange rate, respectively. Indirectly, it illustrates the significance of the inflation rate as one of the control variables in the debt-growth model. It can cause disturbance to the current economic condition (Arcabic et al., 2018). The measurement to represent inflation rate can derive from the consumer price index (Ewaida, 2017; Onafowora & Owoye, 2017) as well as the GDP deflator (Gomez-Puig & Sosvilla-Rivero, 2017). Since an inflationary condition might create disturbance to the economic growth, there is a negative relationship between these two variables as what has been found by previous researchers (Bhatt & Neveu, 2018; Butkus & Seputiene, 2018; Kim et al., 2017).

6.5. Openness

The openness, as the final theme, can be divided into two sub-themes: trade (TR) and foreign aid (FA). Within the sub-theme of trade, we found three variables, namely balance of payment (BOP), trade openness (TO) as well as terms of trade (TT). The most popular variable to represent this theme is trade openness since 17 out of 26 articles include this variable as an additional variable in their debt-growth model. By looking at table 4, the least popular variables were BP, TT and FA because they were included once out of 26 articles. A country with a higher level of trade openness indicates the existence of a higher degree of globalization and free trade (Onafowora & Owoye, 2017). In representing the trade openness, two main series were always being used namely sum of exports and imports to GDP (Ahlborn & Schweickert, 2018; Pegkas, 2018) as well as trade balance to GDP (Ewaida, 2017; Kempa & Khan, 2017). The latter can be calculated by differencing the values of exports and imports and divide it with GDP.

The sign of the trade openness towards GDP is positive due to its capability to create efficiency gains via the transfer of knowledge and technology (Shkolnyk & Koilo, 2018). When the economy is allowing more exports and imports transactions worldwide, it opens up new possibilities for the economy to learn new things from their trading partners via the exchange of ideas, products, services and expertise. Ultimately, it creates value added to the economy by combining the new knowledge and technology gains for the betterment of the whole economy.

7. Conclusions

Out of 26 variables found in the articles, five variables are highly essential to be included in the growth model augmented with debt. It is due to a large number of articles that use these variables in explaining the growth model. The variables are population growth (14 articles), physical capital (total of 21 articles), human capital (8 articles), inflation rate (17 articles), and trade openness (17 articles). The physical capital includes the gross capital formation, the gross fixed capital formation, foreign direct investment as well as total investment. In the meantime, human capital includes life expectancy and average years of schooling. The first three variables should not be neglected by any means since they are part of the variables in the growth theories, as explained in the endogenous growth model. Even though the growth theories did not integrate the other two variables, their contribution is tremendous in influencing economic growth, especially for indebted countries.

8. Recommendations

The findings from this systematic review have led to various recommendations for future research. Firstly, with regards to the papers related to the economic growth, the model should be formed based on the endogenous growth model, rather than any other growth models such as the Solow growth model and the Harrod-Domar model. It is in-line with the above findings that highlight the importance of human capital investment in the growth model. The Solow growth model and the Harrod-Domar model did not integrate this variable as the primary sources of growth. These two models highlight the importance of labour and capital only in boosting the economic growth of a country. Thus, instead of using these two models, future researchers should use the endogenous growth model as a basis of forming the growth model since it caters the human capital investment as one of the control variables. Moreover, this study is only focusing on the growth model augmented with debt variable. It demonstrates further needs of a systematic review on the growth model as a whole since it will help future researchers to select the best control variables in their growth model.

Acknowledgement

The authors are grateful to the editor and anonymous reviewers of the journal, as well as participants of the ICEELST 2020 for their insightful comments that allowed us to improve the paper.

References

1. Ahlborn, M., & Schweickert, R. (2018). Public debt and economic growth – economic systems matter. International Economics and Economic Policy, 15(2), 373–403.
2. Arcabic, V., Tica, J., Lee, J., & Sonora, R. J. (2018). Public debt and economic growth conundrum: Nonlinearity and inter-temporal relationship. Studies in Nonlinear Dynamics and Econometrics, 22(1), 1–20. https://doi.org/10.1515/snde-2016-0086
3. Awdeh, A., & Hamadi, H. (2017). Factors hindering economic development: Evidence from the MENA countries. International Journal of Emerging Markets, 14(2), 281–299.
4. Bhatt, V., & Neveu, A. R. (2018). Re‐thinking debt burden: Going with the flow? Eastern Economic Journal, 45(2), 179–203. https://doi.org/10.1057/s41302-018-0113-x
5. Bitar, N., Chakrabarti, A., & Zeaiter, H. (2018). Were Reinhart and Rogoff right? International Review of Economics & Finance, 58, 614–620.
6. Boldeanu, F. T., & Constantinescu, L. (2015). The main determinants affecting economic growth. Bulletin of Transilvania University of Brasov, 8(57), 329–338.
7. Burhanudin, M. D. A., Muda, R., Nathan, S. B. S., & Arshad, R. (2017). Real effects of government debt on sustainable economic growth in Malaysia. Journal of International Studies, 10(3), 161–172. https://doi.org/10.14254/2071-8330.2017/10-3/12
8. Butkus, M., & Seputiene, J. (2018). Growth effect of public debt: The role of government effectiveness and trade balance. Economies, 6(4). https://doi.org/10.3390/economies6040062
9. Chen, C., Yao, S., Hu, P., & Lin, Y. (2017). Optimal government investment and public debt in an economic growth model. China Economic Review, 45, 257–278. https://doi.org/10.1016/j.chieco. 2016.08.005
10. Chiu, Y., & Lee, C.-C. (2017). On the impact of public debt on economic growth: Does country risk matter? Contemporary Economic Policy, 35(4), 751–766. https://doi.org/10.1111/coep.12228
11. Domar, E. D. (1947). Expansion and employment. The American Economic Review, 37(1), 34–55.
12. Ewaida, H. Y. M. (2017). The impact of sovereign debt on growth: An empirical study on GIIPS versus JUUSD countries. European Research Studies Journal, 20(2), 607–633.
13. Gomez-Puig, M., & Sosvilla-Rivero, S. (2017). Heterogeneity in the debt-growth nexus: Evidence from EMU countries. International Review of Economics and Finance, 51, 470–486. https://doi.org/10.1016/j.iref.2017.07.008
14. Gomez-Puig, M., & Sosvilla-Rivero, S. (2018). Public debt and economic growth: Further evidence for the euro area. Acta Oeconomica, 68(2), 209–229. https://doi.org/10.1556/032.2018.68.2.2
15. Gómez-Puig, M., & Sosvilla-Rivero, S. (2018). Nonfinancial debt and economic growth in euro-area countries. Journal of International Financial Markets, Institutions and Money, 56, 17–37. https://doi.org/10.1016/j.intfin.2018.03.005
16. Harrod, R. F. (1948). Towards a dynamic economics, some recent developments of economic theory and their application to policy. London: Macmillan.
17. Karadam, D. Y. (2018). An investigation of nonlinear effects of debt on growth. Journal of Economic Asymmetries, 18, 1–13. https://doi.org/10.1016/j.jeca.2018.e00097
18. Kempa, B., & Khan, N. S. (2017). Spillover effects of debt and growth in the euro area: Evidence from a GVAR model. International Review of Economics and Finance, 49, 102–111. https://doi.org/10.1016/ j.iref.2017.01.024
19. Kim, E., Ha, Y., & Kim, S. (2017). Public debt, corruption and sustainable economic growth. Sustainability, 9(3), 433. https://doi.org/10.3390/su9030433
20. Ko, M.-C. (2019). Fiscal policy, government debt, and economic growth in the Kaleckian model of growth and distribution. Journal of Post Keynesian Economics, 42(2), 215–231. https://doi.org/10.1080/ 01603477.2018.1503056

21. Liaqat, Z. (2019). Does government debt crowd out capital formation? A dynamic approach using panel VAR. Economics Letters, 178, 86–90. https://doi.org/10.1016/j.econlet.2019.03.002

22. Lim, J. J. (2019). Growth in the Shadow of Debt. Journal of Banking and Finance, 103, 98–112. https://doi.org/10.1016/j.jbankfin.2019.04.002

23. Lucas, R. E. (1988). On the mechanics of economic development. Journal of Monetary Economics, 22(1), 3–42.

24. Maitra, B. (2019). Macroeconomic impact of public debt and foreign aid in Sri Lanka. Journal of Policy Modeling, 41(2), 372–394.

25. Mhlaba, N., & Phiri, A. (2019). Is public debt harmful towards economic growth? New evidence from South Africa. Cogent Economics and Finance, 7(1), 1–15. https://doi.org/10.1080/23322039. 2019.1603653

26. Miranda, A. E. R. (2018). Finding opportunities in Japan's aging population. CIRSS Commentaries, 5(7), 5–7.

27. Nagarajan, R., Teixeira, A. A. C., & Silva, S. (2017). The impact of population ageing on economic growth: A bibliometric survey. The Singapore Economic Review, 62(2), 275–296. https://doi.org/10.1142/ S021759081550068X

28. Onafowora, O., & Owoye, O. (2017). Impact of external debt shocks on economic growth in Nigeria: A SVAR analysis. Economic Change and Restructuring, 52(2), 157–179. https://doi.org/10.1007/ s10644-017-9222-5

29. Pegkas, P. (2018). The effect of government debt and other determinants on economic growth: The Greek experience. Economies, 6(1). https://doi.org/10.3390/economies6010010

30. Petrakos, G., Arvanitidis, P., & Pavleas, S. (2007). Determinants of economic growth: The experts' view (No. 20).

31. Reinhart, C. M., Reinhart, V. R., & Rogoff, K. S. (2012). Public debt overhangs: Advanced-economy episodes since 1800. Journal of Economic Perspectives, 26(3), 69–86.

32. Romer, P. M. (1986). Increasing returns and long-run growth. Journal of Political Economy, 94(5), 1002–1037.

33. Shahor, T. (2018). The impact of public debt on economic growth in the Israeli economy. Israel Affairs, 24(2), 254–264. https://doi.org/10.1080/13537121.2018.1429547

34. Shkolnyk, I., & Koilo, V. (2018). The relationship between external debt and economic growth: Empirical evidence from Ukraine and other emerging economies. Investment Management and Financial Innovations, 15(1), 387–400. https://doi.org/10.21511/imfi.15(1).2018.32

35. Snowdon, B., & Vane, H. R. (2005). Modern macroeconomics. United Kingdom: Edward Elgar Publishing Limited.

36. Solow, R. M. (1956). A contribution to the theory of economic growth. Quarterly Journal of Economics, 70(1).

37. Taher, H. (2017). The impact of government debt on economic growth: An empirical investigation of the Lebanese market. International Journal of Euro-Mediterranean Studies, 10(1), 23–41.

38. Yang, L., & Su, J. (2018). Debt and growth: Is there a constant tipping point? Journal of International Money and Finance, 87, 133–143. https://doi.org/10.1016/j.jimonfin.2018.06.002